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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,200	06/21/2001	Isamu Tobita	JP920000070US1	8666

25299 7590 12/17/2003

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EXAMINER

CHAU, MINH H

ART UNIT PAPER NUMBER

2854

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,200

Applicant(s)

TOBITA, ISAMU

Examiner

Minh H Chau

Art Unit

2854

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In view of the appeal brief filed on 08/21/2003, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4, 6 and 10-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (US # 5,039,238) in view of Ohsawa et al. (US # 4,774,882).

With respect to claims 1-2, 4 and 6, Kikuchi et al. teach a dot matrix printer or an impact printer or a form printer comprising a plurality of print wires or pins (131) for impacting a medium or a form on a platen, a drive means or a drive unit (Fig. 8) having a coil for driving the pins (131) in both forward and backward directions using magnetic force generated by electricity, electricity supply means (50) for supplying electricity to the coil, the impact force of the pins (131) are changed according to changes of the magnetic force and a CPU or an impact force controller (101) for controlling the impact force of the print wires or pins (131) (see Figs. 1-10 and cols. 1-6 of Kikuchi et al.)

Kikuchi et al. teach all the limitations as explained above, except for the limitation of the impacts force of the pins is changing accordance with the settings for characters that are to be printed.

Ohsawa et al. teach an impact printer comprising an energizing pulse generator or an impact force controller (36) for controlling the impact force of the hammer (16) accordance to the settings for characters to be printed (see col. 6 of Ohsawa et al.)

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the device of Kikuchi et al. with an impact force controller for controlling the impact force of the hammer accordance to the settings for characters to be printed that taught by Ohsawa et al. so that a design density for a selected character can be achieved.

With respect to the recitation of "changing ... impact force" (lines 5-11 of claim 6), Ohsawa et al. teach an impact printer comprising an energizing pulse generator or an impact force controller (36) for controlling the impact force of the

hammer (16) accordance to the settings for characters to be printed, the controller controlling the impact force of the print hammer by reducing or increasing the impact force of the print hammer according to the high density printing mode (thick characters) or normal density printing mode (fine characters) (see cols. 4-8 of Ohsawa et al.).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the device of Kikuchi et al. with an impact force controller for controlling the impact force of the print hammer in according to the high or normal density printing mode that taught by Ohsawa et al. so that a design density for a selected character can be achieved.

With respect to claim 3, see col. 5 of Kikuchi et al. that teach a CPU or the impact force controller (101) for controlling the voltage that supply to the electromagnetic actuating means of the print hammers (131).

With respect to claims 10 and 11, Kikuchi et al. teach a method and a printing controller for a printer comprising print wires or pins (131) for print a plurality of dots to form characters on a medium, a CPU or data analyzer (101) for identifying or determining the information or characters to be printed and for controlling the impact force of the print wires or pins (131) (see cols. 1-6 of Kikuchi et al.).

Kikuchi et al. teach all the limitations as explained above to claims 10 and 11, except for the limitation of "generating impact ... character set" (claim 10) and "a printer controller ...the pins" (claim 11).

Ohsawa et al. teach an impact printer comprising an energizing pulse generator or an impact force controller (36) for controlling the impact force of the hammer (16)

accordance to the type of characters set which is identified or determined by the CPU or data analyzer (32) (see col. 6 of Ohsawa et al.).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the device of Kikuchi et al. with a pulse control circuit or a printer head controller (40) that taught by Ohsawa et al. so that a design density for a selected character can be achieved.

4. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. and Ohsawa et al. as explained to claim 4 above, and in view of The IBM Technical Disclosure Bulletin (NN79034110)

With respect to claim 5, the modified device of Kikuchi et al. and Ohsawa et al. teach all the limitations as explained above to claim 4, except for the moving velocity of the pins is changed in order to alter the impact force.

The IBM Technical Disclosure Bulletin teach an electronic control of print impact in a typewriters including control means for assigning discrete impact force or impact velocities to each character font (page 4110-4112).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the device of Kikuchi et al. and Ohsawa et al. with the control means for assigning discrete impact force or impact velocities to each character font that taught by The IBM Technical Disclosure Bulletin so that the impact force for the selected character can be precisely achieved.

5. **Claims 7-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (US # 5,039,238) in view of Kobayashi et al. (US # 4,566,813).

With respect to claims 7 and 8, Kikuchi et al. teach a dot matrix printer or an impact printer comprising a plurality of print wires or pins (131) for transferring the impact force and a CPU or an impact force controller (101) for controlling the impact force of the print wires or pins (see Figs. 1-10 and cols. 1-6 of Kikuchi et al.).

Kikuchi et al. teach all the limitations as explained above, except for the limitation of changing the impact force of the pins according to the number of dots that arranged across the widths of lines forming the print image.

Kobayashi et al. teach a dot matrix printer controller comprising a control circuit for controlling the pulse width current applied to the print heads in according to the total number of dots used to print character (print image) or a number of dots that arranged across the widths of lines forming the print image (see cols. 3-5 of Kobayashi et al.).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the impact force controller of Kikuchi et al. to include the control circuit for controlling the pulse width current applied to the print heads in according to the total number of dots used to print character as taught by Kobayashi et al. so that the thickness or the print density of a selected character or image can be consistency maintained.

With respect to claim 9 and the recitation of "the impact force... object image" (lines 6-8 of claim 8), Kobayashi et al. teach a control circuit comprising a upper limit or a lower limit mode for control of increasing or decreasing the width of the

applied pulse in according to the total of dots used to print character (print image) or a number of dots that arranged across the widths of lines forming the print image (see cols. 3-6 of Kobayashi et al.).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the impact force controller of Kikuchi et al. to include the control circuit comprising a upper limit or a lower limit mode for control of increasing or decreasing the width of the applied pulse in according to the total of dots used to print character as taught by Kobayashi et al. so that print quality such as thickness or print density can be consistency maintained during the printing of a selected character.

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikuchi et al. (US # 5,039,238) and Ohsawa et al. (US # 4,774,882) in view of The IBM Technical Disclosure Bulletin (NN79034110)

With respect to claims 12 and 13, Kikuchi et al. teach a method and a printing controller for a printer comprising print wires or pins (131) for print a plurality of dots to form characters on a medium, a CPU or a data analyzer (101) ffor identifying or determining the information or characters to be printed and for controlling the impact force of the print wires or pins (131) (see cols. 1-6 of Kikuchi et al.).

Kikuchi et al. teach all the limitations as explained above, except for the limitation of changing the impact force of the pins according to the type of character set determining by the data analyzer.

Ohsawa et al. teach an impact printer comprising an energizing pulse generator or an impact force controller (36) for controlling the impact force of the hammer (16) according to the type of characters set which is identified or determined by the CPU or data analyzer (32) (see col. 6 of Ohsawa et al.).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the device of Kikuchi et al. with a pulse control circuit or a printer head controller (40) that taught by Ohsawa et al. so that a design density for a selected character can be achieved.

The modified device of Kikuchi et al. and Ohsawa et al. teach all the limitations as explained above, except for limitation of the impact force of the pins is changing or being selected to a designated setup value corresponds to a character font determining by the data analyzer.

The IBM Technical Disclosure Bulletin teach an electronic control of print impact in a typewriters including control means for assigning discrete impact force or impact velocities to each character font (page 4110-4112).

In view of this teaching, it would have been obvious to one of ordinary skill in the art to modify the device of Kikuchi et al. and Ohsawa et al. with the control means for assigning discrete impact force or impact velocities to each character font that taught by The IBM Technical Disclosure Bulletin so that the print quality of a variety of character font can be achieved.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh H Chau whose telephone number is (703) 305-0298. The examiner can normally be reached on M - TH 9:30AM - 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H Hirshfeld can be reached on (703) 305-6619. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MHC
December 12, 2003

